

### **Abstract of the Disclosure**

A method for producing the high-value ketocarotenoid astaxanthin by the green microalga *Chlorella zofingiensis* in dark-heterotrophic cultures shows excellent growth and high-yield astaxanthin production on glucose-supplemented media in the dark. The specific growth rate and astaxanthin yield can be as high as  $0.031\text{ h}^{-1}$  and  $10.3\text{ mg l}^{-1}$ , respectively, which are the highest so far reported in heterotrophic algal cultures. The light-independent astaxanthin-producing ability of *Chlorella zofingiensis* can be employed for commercial production of astaxanthin using industrial fermenters.